Remarks

The Office Action dated February 9, 2007 has been carefully considered. Favorable reconsideration of the application is hereby requested.

Claims 1, 11, and 13 have been canceled. New claims 29-31 have been added. No new matter has been added.

Claim Objections

Claim 13 was objected to because of an informality. Claim 13 has been canceled. In view of the cancellation of claim 13, this objection is moot.

Claim Rejections - 35 USC § 112

Claims 1, 3-6, 8-11, 13-15, and 17-19 are rejected under 35 USC 112, first paragraph as failing to comply with the written description requirement. It is stated that "[t]here appears to be no written description in the instant application where coatings must be free of organic solvent." This rejection is mooted since claims 1 and 11 have been cancelled. Withdrawal of this rejection is requested.

Claim Rejections - 35 USC § 102 / 35 USC § 103

Claims 1, 4-6, 8, and 9 are rejected under 35 USC 102(b) as anticipated by or, in the alternative, under 35 USC 103(a) as obvious over Ganslaw et al. (U.S. 4,043,952).

The present invention, as set forth in the current claims, is directed to superabsorbent polymer particles that in accordance with element c) of claim 29 further include a surface crosslinking agent wherein the superabsorbent polymer particles treated with the surface crosslinking agent is heated to a temperature from about 85°C to about 210°C to form surface

crosslinked polymer particles, which in accordance with element d) of claim 29 are coated with a water insoluble inorganic metal compound including monovalent salts, divalent salts, trivalent salts or higher salts wherein the resulting coated surface cross linked superabsorbent polymer composition has a delayed free water absorption property of absorbing about 3.6 grams or less of water per gram of superabsorbent polymer in about 15 seconds. Superabsorbent polymers that are only surface crosslinked do not have the delayed free water absorption property of absorbing about 3.6 grams or less of water per gram of superabsorbent polymer in about 15 seconds. This is shown in Table 1 of the specification. The Table below includes a portion of Table 1 of the specification including examples directed to the current claims and the drying temperature of the comparative examples included in the Table.

In Table 1, the comparative examples SXM71, SXM77, and SXM880 are surface crosslinked superabsorbent polymer compositions commercially available from Stockhausen Inc. For instance, Table 1 includes comparative example 3 and example 3 based on various surface crosslinked superabsorbent polymer compositions. Each superabsorbent polymer composition of the present invention shows the unexpected result of a lower free water absorption then that of the uncoated superabsorbent polymer composition. It is purported that none of the references cited by the Examiner disclose a surface crosslinked superabsorbent polymer that is coated with a coating selected from monovalent salts, divalent salts, trivalent salts or higher salts.

Table. Effect of Coatings on Surface Crosslinked SAPs

Example	Surface Crosslinked SAP	Coating %wt/wt	Drying Temp and Time	FWA_{15sec} (g/g)	% Reduction FWA
Comp Ex 3	SXM71	none	100°C for 1 hr	8.6	--
Comp Ex 3	SXM77	none	100°C for 1 hr	16.1	--
Comp Ex 3	SXM800	none	100°C for 1 hr	10.4	--
Example 3	SXM71	1	100°C for 1 hr	1.5	83
Example 3	SXM71	5	100°C for 1 hr	0.7	92
Example 3	SXM77	1	100°C for 1 hr	5.1	68
Example 3	SXM77	2	100°C for 1 hr	3.2	80
Example 3	SXM880	1	100°C for 1 hr	4.6	56
Example 3	SXM880	5	100°C for 1 hr	2.8	73
Comp Ex 4	SXM71	none	100°C for 1 hr	8.6	--
Example 4	SXM71	2	100°C for 1 hr	1.7	80
Example 4	SXM71	5	100°C for 1 hr	0.8	91
Example 4	SXM71	10	100°C for 1 hr	0.5	94
Comp Ex 5	SXM71	none	100°C for 1 hr	8.6	--
Comp Ex 5	SXM77	none	100°C for 1 hr	16.1	--
Comp Ex 5	SXM880	none	100°C for 1 hr	10.4	--
Example 5	SXM71	1	100°C for 1 hr	3.0	65
Example 5	SXM77	2	100°C for 1 hr	2.8	67
Example 5	SXM880	5	100°C for 1 hr	1.6	81
Example 5	SXM71	1	100°C for 1 hr	12.4	23
Example 5	SXM77	2	100°C for 1 hr	8.0	50
Example 5	SXM880	5	100°C for 1 hr	7.0	57
Example 5	SXM71	1	100°C for 1 hr	5.7	45
Example 5	SXM77	2	100°C for 1 hr	4.4	58
Example 5	SXM880	5	100°C for 1 hr	3.6	65
Comp Ex6	SXM71	none	100°C for 1 hr	8.6	--
Example 6	SXM71	2	100°C for 1 hr	8.1	6
Example 6	SXM71	5	100°C for 1 hr	5.7	36
Comp Ex7	SXM71	none	100°C for 1 hr	8.6	--
Example 7	SXM71	2	100°C for 1 hr	5.0	42
Example 7	SXM71	5	100°C for 1 hr	3.5	59
Comp Ex8	SXM71	none	100°C for 1 hr	8.6	--
Example 8	SXM71	2	100°C for 1 hr	3.4	60
Example 8	SXM71	5	100°C for 1 hr	1.5	83

Ganslaw et al. does not disclose the present invention. The Examiner is correct in that Ganslaw et al. discloses surface treatment of superabsorbent particles with a solution of polyvalent metal ion. However, Ganslaw discloses the surface treated superabsorbent polymer is heat treated but fails to disclose coating the heat treated surface treated superabsorbent polymer with a water insoluble inorganic metal compound as set forth in the present claims, for example, element (d) in claim 29.

Specifically, Ganslaw et al. discloses the dispersion is maintained at a temperature of about -40°C to about +150°C for a period of time sufficient for the cation to ionically complex the exposed surface of the composition of matter. Ganslaw et al. does not disclose applying a coating to the surface crosslinked superabsorbent polymer particles. The present claims require the surface treatment including surface crosslinking the polymer including heat treatment, and then coating of the surface crosslinked superabsorbent polymer. Ganslaw et al. fails to disclose or suggest the present invention. In view of the foregoing remarks, withdrawal of the rejection of claims 1, 4-6, 8, and 9 under 35 USC 102(b) as anticipated by or, in the alternative, under 35 USC 103(a) as obvious over Ganslaw et al. is requested.

Claim 3 is rejected under 35 USC 103(a) as being unpatentable over Ganslaw et al. As set forth above Ganslaw et al. does not disclose the present invention. In view of the foregoing remarks, withdrawal of the rejection of claim 3 under 35 USC 103(a) as obvious over Ganslaw et al. is requested.

Claims 10, 12-15, and 17-19 are rejected under 35 USC 103(a) as being unpatentable over Ganslaw et al. As set forth above, Ganslaw et al. does not disclose the present invention. In view of the foregoing remarks, withdrawal of the rejection of claims 10, 12-15, and 17-19 under 35 USC 103(a) as obvious over Ganslaw et al. is requested.

Claims 1, 4-6, 8-10, 14-15, and 17-19 are rejected under 35 USC 102(b) as anticipated by or, in the alternative, under 35 USC 103(a) as obvious over Mertens et al. (WO 00/53664; equivalent document U.S. 6,620,889 relied upon for translation). Mertens et al. does not disclose the present invention as set forth in the current claims of this response. In the previous Office Action of October 10, 2006, the Examiner states that Mertens et al. discloses treatment of superabsorbent particles at the surface with an aqueous solution of aluminum sulfate (example 1). Mertens et al. discloses in Example 1 treatment of superabsorbent particles at the surface with a solution of 1,3-dioxolan-2-one, water, and aluminum sulfate and subsequently heated for 30 minutes in an oven to 180°C. This corresponds to what is called a surface crosslinked superabsorbent polymer. Examples of surface crosslinked superabsorbent polymers commercially available include comparative examples SXM71, SXM77, and SXM800 in Table 1 of the present invention.

Example 1 of Mertens et al. is different from the present invention. Example 1 does not include a coating on the surface crosslinked superabsorbent polymer as set forth in the present claims. Furthermore, Mertens et al. does not disclose or suggest coating surface crosslinked superabsorbent polymer particles with a water insoluble inorganic metal compound. As shown above in the Table, surface crosslinked superabsorbent polymers do not have the free water absorption properties of coated surface crosslinked superabsorbent polymers that have been coated with a water insoluble inorganic metal compound. In view of the foregoing remarks, withdrawal of the rejection of claims 1, 4-6, 8-11, 13-15, and 17-19 under 35 USC 102(b) as anticipated by or, in the alternative, under 35 USC 103(a) as obvious over Mertens et al. is requested.

Claims 1 and 4-6, 8-10, 14-15, and 17-19 are rejected under 35 USC 102(b) as anticipated by or, in the alternative, under 35 USC 103(a) as obvious over Gartner et al. (U.S. 6,323,252). Gartner et al. is directed to a surface crosslinked superabsorbent polymer that, after heat treatment for surface crosslinking, is remoisturized with an aqueous additive solution in the absence of an organic solvent or water-insoluble, not-swellable powder and including salts of monovalent and selected multivalent metal ions. In this step, Gartner et al. adds water to the superabsorbent polymer composition. In the present invention, water is removed from the coating by drying at about 100°C for about 1 hour.

In addition to the foregoing, the Affidavit of Dr. Ahmed submitted with the December 11, 2006 response shows that Example 7 of Gartner et al. does not have the free water absorption property set forth in the present claims. In addition, it is pointed out that Gartner et al. fails to disclose drying the coated superabsorbent polymer composition at a temperature of about 100°C for about 1 hour as set forth in new claims 30 and 31. In fact, drying the superabsorbent polymer composition as disclosed in Gartner et al. would destroy the remoisturization effect required in Gartner et al. In view of the foregoing remarks, withdrawal of the rejection of claims 1, 4-6, 8-11, 13-15, and 17-19 under 35 USC 102(b) as anticipated by or, in the alternative, under 35 USC 103(a) as obvious over Gartner et al. is requested.

Claims 1 and 3-6, 8-10, 14-15, and 17-19 are rejected under 35 USC 102(b) as anticipated by or, in the alternative, under 35 USC 103(a) as obvious over Harada et al. (U.S. 5,115,011). Harada et al. is directed to a nonsurface crosslinked superabsorbent polymer that, after drying, is surface treated with a coating. Harada et al. fails to disclose surface treating superabsorbent polymer particles with from about 0.001% to about 5% by weight of a surface

crosslinking agent wherein the surface treated superabsorbent polymer particles are heated at a temperature of from about 85°C to about 210°C to form surface crosslinked superabsorbent polymer particles. In view of the foregoing remarks, withdrawal of the rejection of claims 1, 3-6, 8-11, 13-15, and 17-19 under 35 USC 102(b) as anticipated by or, in the alternative, under 35 USC 103(a) as obvious over Harada et al. is requested.

In view of the forgoing, allowance of Claims 1, 3-6, 8-10, 14-15, 17-19, and 29-31 is hereby requested. If the Examiner has any further questions, Applicants' Attorney would welcome a telephone call to resolve these questions.

Respectfully submitted,

/Philip P. McCann/

Philip P. McCann
Reg. No. 30,919

Smith Moore LLP
P.O. Box 21927
Greensboro, NC 27420
(336) 378-5302
phil.mccann@smithmoorelaw.com

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